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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/762,162

01/21/2004

Ben Lu

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EXAMINER

HUYNH, NAM TRUNG

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/762,162	<b>Applicant(s)</b> LU ET AL.	
	<b>Examiner</b> NAM HUYNH	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

This office action is in response to amendment filed on 12/21/2007. Of the previously presented claims 1-11, claims 9-11 have been cancelled and claims 12-17 have been added.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-8 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (US 6,388,997) in view of Smith (US 5,642,355)

Regarding claim 1, Scott teaches a method in a time division duplex mobile communication network (column 5, lines 23-25) comprising the steps of:

estimating a propagation delay between a base station and a plurality of mobile stations in the time division duplex mobile communication network (column 16, lines 21-34 and column 18, lines 27-37);

where the frame has a guard time between transmissions from the base station to the mobile stations and transmissions received by the base station from the mobile stations, setting the guard time in the frame to a value based on the propagation delay between the base station and the first mobile station (column 16, lines 34-45 and column 18, lines 27-37).

However, Scott does not explicitly teach that time slots are rearranged in a frame in the time division duplex mobile communication network so that if the propagation delay between the base station and a first mobile station is less than the propagation delay between the base station and a second mobile station the first mobile station is permitted to transmit in a time slot before timeslot of the second mobile station in the frame. Smith teaches arranging time slots so that they are allocated in the order of their increasing distance from the base station so that transmission bursts contained in the timeslots will be delayed by an increasing amount due to propagation delays (column 4, lines 28-32). In the scope of the invention, the mobile station that is close to the base station (i.e. less propagation delay) is selected an idle timeslot near the front of the frame and if the mobile station is far from the base station then an idle timeslot is selected near the end of the frame (column 6, lines 22-26, the mobile station that is close to the base station is considered to have less propagation delay and the timeslot in front of the frame is considered to be before the timeslot near the end of the frame).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Scott, to include arranging timeslots of a frame in order of their increasing distance from the base station, as taught by Smith, in order to extend the range of the cell substantially in excess of the normal limiting radius.

Regarding claims 2 and 13, Scott teaches transmitting messages to the mobile stations including information specifying the frame for each mobile station (column 38, lines 59-65).

Regarding claims 3 and 14, Scott teaches that the frame in the time division duplex communication system comprises an uplink superframe and a downlink superframe, the uplink superframe further comprising a plurality of uplink time slots for the plurality of mobile stations (columns 9, lines 57-67 and column 10, lines 1-9).

Regarding claims 4, 8, and 15, Scott teaches the value of the guard time is based on a round trip propagation delay between the base station and the first mobile station (column 10, lines 10-22).

Regarding claims 5 and 16, Scott teaches that the value of the guard time is based on a two times a single trip propagation delay between the base station and the first mobile station (column 11, lines 57-67 and column 12, lines 1-18)

Regarding claims 6 and 17, Smith teaches the first mobile station is closer to the base station than the other mobile stations (column 6, lines 22-26).

Regarding claim 7, the limitations are rejected as applied to claims 1 and 3.

Regarding claim 12, the limitations are rejected as applied to claim 1.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-8 and 12-17 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miyamoto et al. (US 2001/0040879)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAM HUYNH whose telephone number is (571)272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH  
3/12/08

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617